

bend inward over the back, the spines becoming converged and the whole concealed by a triangular fold of skin. The presence of this fold is the only essential difference between these tufts of *Doratifera* and our *Parasa*. The muscular function may be slightly present in *Parasa*; it is certainly so in *Sisyrosea nasoni*, though in this case the horns bend outward.

The second modification is produced by the lengthening of the horn and the reduction of the stinging spines. I find on the tentacles of the larva sent me by Mr. Olive not only a few setae, but several distinctly formed, though very short stinging spines, as well as a great number of degenerate irregular lumps, representing the mass of the spines. In

this larva the tentacles are present for all the horns of the lateral row and joint 13 as well as for the subdorsals of 3 and 12 where they are especially long.

The subdorsals of 6 to 11 are very short, rudimentary, again much as in our *Parasa*, but their spines are absent, just as on the long horns, which is not the case in our species.

To summarize: the Australian Eucleids belong to the group of the horned Eucleids of Asia, Africa(?)\* and America, but differ in having the spines removed from the horns which have not become eversible. It is a distinct and peculiar specialization of one of the highest types of larvae and possibly represents the most modified Eucleid larva on the earth.

## PACIFIC COAST COLLECTING.—II.

BY ALBERT PITTS MORSE, WELLESLEY, MASS.

### LOCALITIES.

*Yuma*. R. R. hotel; drinking-water detestable. Surroundings chiefly river-flats covered with willow-thickets, and desert. A rocky hill, chaparral, and ranches at a little distance. This place and points in Colorado Desert are likely to be extremely hot.

*Indio*. R. R. hotel. Desert thickly covered with weeds and chaparral; fruit ranch with artesian well and running water. Mesa and foot of mountains 3 to 4 miles distant. A good place,

*Palm Springs*. Five miles from station of same name and directly at base of San Jacinto Peak. Inn and fruit ranches. Desert, ranches with fields and orchards, several canyons with wild date-palms, streams, waterfalls, etc. An extremely favorable locality.

Additional places in the Colorado Desert that would probably repay visits are Flowing Well—natural spring, — Salton — 250 ft. below sea-

\* I have seen no African larvae, but species of *Parasa* are recorded from there.

level, salt wells, — and Walters—much like Indio.

*Cabazon.* Opposite this station a disused logging-road runs up several thousand feet on San Jacinto Peak.

*Beaumont. Banning.* Near summit of pass. Wheat-ranches and fruit-orchards; hills and mountains in background.

*San Bernardino.* Good central point, with great variety of collecting grounds within easy reach. Fields, orchards, streams, arroyos, etc.: river and meadows at Colton. A very satisfactory trip is by Santa Fe R. R. to Cahon or Summit station in Cahon Pass (camp out) for mountains, canyons, etc. Mt. San Bernardino (11,600 ft.) can be reached from this vicinity; San Jacinto Peak (11,000) from San Jacinto; burro trails.

*North Ontario.* Trails to Cucamonga Peak (8,000), and Old Baldy (10,000).

*Los Angeles.* Fine central point. Good collecting along river and hills near trolley-line to Pasadena. Be sure to visit Mt. Wilson, — R. R. and carriage to Eaton Canyon, burro-trail to summit, where good accommodations are to be had; good collecting at deserted ranch opposite water-trough 3 miles up, and at summit. Try sea-shore at South Santa Monica (sand, saltmarshes, etc.) or at Long Beach. Visit Santa Catalina Island.

*San Diego.* Temperature delightful. Fauna similar to that of region about Los Angeles. Be sure to visit Pt. Loma and Coronado, — chaparral,

sand, saltmarshes, botanic gardens; meadows, marshes, and hills at Oldtown; sand and saltmarshes toward National City.

*Laurel.* In tree yucca belt on south side of Mojave Desert. Desert, ranches, artesian wells and tanks, running water; good variety and rich collecting-ground; stay at least two or three days.

*Mojave.* Not to be thought of; nothing but bare sand on one side and a forest of creosote-bush (*Larrea*) on the other.

*Tehachapi.* At summit of pass, 4,000 ft. Wheat-ranches, pasture foothills, pine forest on mountains. Go up road to mines and forest west of village. Salt lake 6 miles south. A good place.

*Caliente.* At base of mountains, 1,300 ft. Looked interesting and would probably repay a visit.

*Bakersfield* (Kern City). Irrigated ranches and desert-like wild land; collecting fair.

*Tulare.* Good place. — ranches, wild land, streams, gardens, etc.

*Raymond.* Point of departure for Yosemite Valley. At base of hill-country; oak-dotted hills and a few streams.

*Route to Yosemite Valley.* Country more hilly but much the same as that about Raymond till near Ahwanee, where there is good collecting at Crook's ranch, — streams, fields, orchards, etc. A few miles beyond the forest begins and continues till the Valley is reached, with openings at Fish Camp and Wawona, — streams, mead-

ows, etc., collecting good but much like that in the Valley. The Big Tree Grove is 2 to 3 miles (by trail) off the road between Fish Camp and Wawona.

*Yosemite Valley.* Forests, streams, meadows, a few fields and orchards. Trail to Cloud's Rest gives good range of elevation and collecting up to nearly 10,000 ft. A few high meadows on road from Glacier Pt. to Chinquapin, if one returns that way.

*San Francisco.* Central point. Among other places visit Mill Valley and Mt. Tamalpais,—redwoods in canyon, streams, fields, hills, etc. Salt-marshes and hills at Baden; marshes and sand at West Berkeley. Leona Heights is well recommended.

*Sacramento.* A good place, on river. Extensive marshes along R. R. west of city; woods, fields, etc., east of city.

*Tehama.* On Sacramento River. Good variety, fields, orchards, woods, river-banks and washes.

*Sisson.* 3500 ft. An excellent collecting-ground; forest, ponds, streams, springs, meadows, fields; State fish-hatchery. Be sure to visit base of Mt. Shasta (10 miles, horseback or foot, camp out) and collect about timberline, 7500 to 9000 ft., nothing of interest above. The ascent of Shasta (14,400 ft.) may be accomplished on foot in one day from camp and back (7000 ft. climb) or the night may be passed on the summit in lee of shelter-corrals and food cooked at hot springs. Snow-fields, glaciers, volcanic rocks and debris, and at summit hot springs, steam, and sulphurous gases and a very

extensive view. It is a stiff climb, not very difficult or dangerous, but should not be attempted alone; secure guide—E. D. Stewart—and horse at Sisson.

*Gazelle.* 2700 ft. In Shasta Valley. A rich collecting-ground with good variety of surroundings and an interesting contrast in fauna to that previously met.

*Klamathon.* At lower end of Shasta Valley; sage-brush, stony hills, streams, etc.

*Hornbrook.* On branch of Klamath R. Looked interesting, with farms, pastures and orchards, woods in background.

*Siskiyou, Or.* 4130 ft. In forest at north end of tunnel through Siskiyou Mts. Forest, ledges, small stream. Good.

*Ashland.* 1900 ft. Farms, orchards, hills, streams, mountains and forest in background. A very good place.

*Grant's Pass.* Much the same as Ashland, also very good.

*Glendale.* On Cow Creek, in dense forest. A beautiful spot and well worth a stop.

*Roseburg.* On Umpqua River. Stage to coast. Open plain and hill country; soil adobe; collecting fair.

*Drain.* A good place, with much variety; sandy soil, streams, hills, farms, forest, etc.; collecting excellent.

*Willamette Valley.* The Willamette Valley is quite uniform in character, and there is little choice of collecting-points. Chemawa, Woodburn, and Clackamas looked promising. Corval-

lis (on R. R. from Albany to coast) is good. Mary's Peak (4000 to 5000 ft.) in Coast Range, will repay a visit; take R. R. from Albany to Philomath, road 3 miles, trail 5 miles. Trail runs up through untouched forest; on summit is a large grassy pasture and a fine view of the Cascade Mts., including nine snowclad peaks.

*Portland.* Go up on the Heights and reconnoitre. Take trolley-car to Columbia slough for flower-loving insects. Do not miss trip by steamer up Columbia River to Hood River or Dalles east of Cascades, — an all-day ride. From Hood River one may go by stage to Cloud Cap Inn at timberline on Mt. Hood.

Western Washington is much like the Willamette Valley, but more thickly wooded. For forests try Ainslie or Napavine; for open mixed country Chehalis or Centralia. Tenino is very good, — stream, forest, clearings, prairie pastures, etc. Treeless gravel plains at Yelm Prairie. Fine old forests in vicinity of Wilkeson and Carbonado,

— by R. R. from Tacoma. Tacoma presents a good variety on the outskirts of the city, — salt-marshes, fields, forests, lakes and gravel plains 6 to 10 miles southwest.

These are a few of the more desirable localities and chiefly those with which I became personally acquainted. There are, of course, many intermediate points that will repay examination if a relatively small area is covered or a particular section is to be investigated. The coastwise country may be reached by steamers from San Francisco or Portland and thence from port to port as opportunity offers, or in some cases by railroad or stage. If preferred, one may, at a slight increase of expense, secure a ticket over the Coast division of the So. Pacific R. R. between Los Angeles and San Francisco, thus reaching Santa Barbara, the Salinas Valley, and other portions of this region. A trip to the Yosemite Valley may be made from San Francisco (by steamer to Stockton, etc.) for less than from Berenda, the usual approach.

#### BUTTERFLY LIFE IN THE TROPICS OF INDIA.

[In a recent paper by Messrs. Davidson, Bell and Aitken on the butterflies of the North Canara district of the Bombay Presidency, in which particular attention is paid to the early stages, we find the following passage, which presents in a few words a striking contrast to what is found in temperate regions and which may therefore interest our readers.]

Collectors in other parts of India often write of the number of broods in the year in terms which imply more regularity than we have observed in this moist and equable climate. We are not inclined to think that the majority of species here have any fixed number of broods in the year. One generation succeeds another as fast as conditions permit. It would be difficult to name